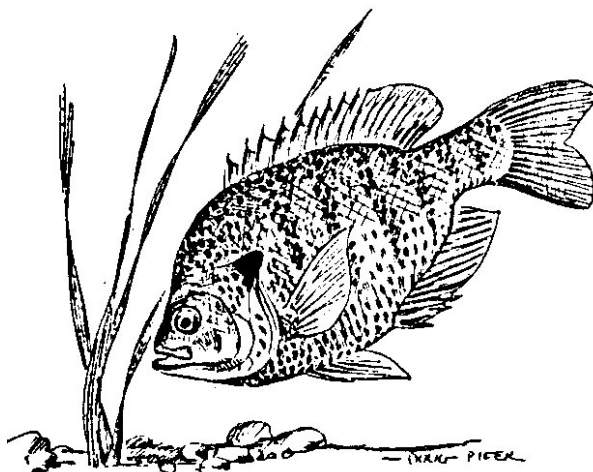


NURSERY POND

2004 Fish Management Report

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INTRODUCTION

Nursery Pond is a 1-acre impoundment located in Pike County, on Area 3 of Sugar Ridge Fish and Wildlife Area (SRFWA). The shoreline of the impoundment is accessible to bank fishing. There is no boat ramp, so boat access is limited to carry-in boats.

Fisheries surveys were conducted at Nursery Pond in 1994, 2000, and 2002. A 14-inch minimum length limit on largemouth bass is in effect. Other fish management activities consisted of channel catfish stockings in 1995, 1997, 1999, 2001, and 2003.

The initial fish management survey was conducted in 1994, as part of a full survey and management plan conducted on 16 water bodies at SRFWA. Nursery Pond was found to possess the best largemouth bass catch rate and the second best bluegill catch rate at SRFWA. It also had the fastest growing bluegill and bass. Harvestable size bluegill accounted for 15% of the bluegill sampled. Only 3% of the bass sampled were of a harvestable size, but two of those measured 20.4 and 20.8 inches in length. These were the largest bass sampled on SRFWA. There were also 26 redear sunfish sampled of which nine were 9.5 inches or longer.

The 2000 fisheries survey was conducted to evaluate the status of the fish community due to a substantial fish kill occurring in the summer of 1999. It was the first known fish kill to occur at this lake. Survey results indicated the fish kill drastically affected the fish community. It was concluded that the bass population might recover due to the presence of a strong year class of one year old bass. In 2002, the fishery began showing signs of improvement with increased bass and bluegill numbers. However, redear sunfish abundance had not improved.

The current survey was conducted on June 28 and 29, 2004 to monitor bluegill, largemouth bass, and redear sunfish relative abundance. Also, an aquatic vegetation survey was conducted on July 27.

Temperature and dissolved oxygen profiles, turbidity, alkalinity, conductivity, and pH data were collected as per standard lake survey procedures. Fish collection effort consisted of 0.27 hour of pulsed D.C. night electrofishing and two trap net lifts. Two individuals collected fish stunned by the electrofishing boat. The aquatic vegetation survey was conducted as described by Pearson 2004.

RESULTS

Water chemistry data were standard for a southwest Indiana lake. Oxygen was sufficient for fish survival to a depth of 6.0 feet. Turbidity was moderate as indicated by a secchi disk reading of 2.5 feet during the fish management survey and 3.0 feet during the vegetation survey.

Fifteen sites were sampled during the aquatic vegetation survey. Filamentous algae was found at three of the sites. No other species of aquatic vegetation was collected or observed.

A total of 223 fish representing six species was collected that weighed 23.13 pounds. Bluegill was the most abundant by number, followed by largemouth bass, and channel catfish. Other species sampled were black crappie, redear sunfish, and warmouth.

One-hundred-and-eighty-five bluegill were collected that weighed 8.29 pounds. They ranged in length from 1.6 to 6.9 inches. Relative abundance was 83% by number and 36% by weight. Since the fish kill in 2000 bluegill relative abundance by number has remained relatively stable while relative abundance by weight has decreased by 47% (Table 1). The bluegill electrofishing catch rate was 243.4 per hour. Electrofishing catch rates in 1994, 2000, and 2002 were 432.4, 354.5, and 754.5 per hour. Trap net catch rate for bluegill was 60.0 per lift. Previous trap net catch rates were 1.0 (1994), 180.0 (2000), and 167.0 per lift (2002). Growth for age 2 and 3 bluegill has decreased by nearly an inch since 2002, and all ages are slightly below district averages.

Table 1. Percent relative abundance by species and year.

Year	Number			Weight		
	<u>BLG</u>	<u>LMB</u>	<u>RSF</u>	<u>BLG</u>	<u>LMB</u>	<u>RSF</u>
1994	54.9	34.8	8.9	21.5	58.4	16.3
2000	88.1	10.2	0.7	67.8	24.5	2.0
2002	86.9	12.1	0.3	53.1	42.7	0.7
2004	83.0	11.2	1.3	35.8	48.9	5.4

The bluegill proportional stock density (PSD) was 40, which was an increase from the 2002 PSD index value of 30. In 1994 and 2000 the PSD was 26 and 7. The suggested bluegill PSD range indicating a balanced fishery is 20 to 60 (Anderson and Neumann 1996). The relative stock densities (RSD7 and RSD8) were 0 for 2004. In 1994, the RSD7 was 19 and the RSD8 was 15. In 2000 and 2004, the RSD7 was 1 and RSD8 was 0.

The bluegill fishing potential (BGFP) index classified the lake as having “fair” bluegill fishing with an index score of 15 (Ball and Tousignant 1996). In 1994, 2000 and 2002, the BGFP index classified bluegill fishing as “excellent” (score of 35), “fair” (score of 15) and “good” (score of 25). Poor growth and the lack of bluegill eight inches and longer have contributed to the decline in the BFGP index.

Twenty-five largemouth bass were collected that weighed 11.30 pounds. They ranged in length from 1.2 to 14.9 inches. Relative abundance was 12% by number and 49% by weight. Largemouth bass relative abundance by number has varied by 2% since the 2000 survey, while the relative abundance by weight has nearly doubled in the last four years (Table 1).

Largemouth bass electrofishing catch rates, excluding young-of-the-year, were 137.8 (1994), 127.3 (2000), 68.2 (2002), and 71.2 per hour (2004). Growth for age 1 bass was average, while age 2 and 3 bass were 1.5 and 1.0 inch longer than the district average.

The largemouth bass PSD index value was 50. In 2002, the largemouth bass PSD was 7. The suggested largemouth bass PSD range indicating a balanced fishery is 40 to 70 (Anderson and Neumann 1996). The largemouth bass RSD14 was 25. In 2000 and 2002 the RSD14 was 0.

Five channel catfish were collected. They ranged in length from 8.5 to 11.0 inches. They accounted for 2% of the total number and 6% of the total weight of the fish collected.

The remainder of the sample consisted of four black crappie, three redear sunfish, and one warmouth. These species combined for 4% of the total number and 9% of the total weight of the fish collected.

CONCLUSIONS AND RECOMMENDATIONS

Nursery Pond has historically provided quality bluegill, redear sunfish, and largemouth bass fishing. The lake suffered a substantial fish kill in the summer of 1999. Based on the latest survey data, the fishery has failed to successfully recover from the fish kill.

While the bluegill density has increased since the fish kill, growth has continued to decline. The high relative abundance by number and the declining growth indicates a stunted population.

Largemouth bass growth for age 2 and 3 are currently at record highs for Nursery Pond. Unfortunately, the good growth is primarily due to the low relative abundance of bass and high relative abundance of bluegill. Overall, largemouth bass relative abundance by number has remained at low levels and the electrofishing catch rate of 71.2 per hour is one of the lowest seen at Nursery Pond.

Currently, the bluegill and bass populations are not balanced. This is supported by the poor bluegill growth, high bluegill relative abundance, and low bass abundance. It was hoped that over the last four years that the fishery would "fix" itself, but that has not occurred. A supplemental stocking of adult largemouth bass is needed to improve the fishery. A total of 50 adults should be stocked in 2005.

The channel catfish stockings every two years should continue, as fishing pressure for catfish is believed to be high at this pond. The next channel catfish stocking is scheduled for 2005.

Nursery Pond should be resurveyed in 2007 to evaluate the bass stocking and monitor bluegill, largemouth bass, and redear sunfish growth and abundance. If the bluegill and largemouth bass populations are balanced and the redear population has not rebounded, a supplemental stocking of redear sunfish should occur.

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